

CIRCULAR No. 49

(FEBRUARY, 1910)

INSECTICIDES

By H. J. QUAYLE.

1. Lime Sulphur:

Quicklime, 33 pounds; Sulphur, 66 pounds; Water, 200 gallons.

Sift sulphur through box with screen bottom into boiling tank with 50 gallons of water. Add the lime and boil 45 minutes to one hour. Stir frequently. Strain through cheese cloth or burlap and dilute to make 200 gallons. If extra lime is desired strain in milk of lime when spray is ready for use.

2. Commercial Lime Sulphur:

The standard strength corresponding to the above formula is obtained when commercial solution is diluted 1 to 9.

Either of the above for San Jose and other armored scales to be applied during dormant season, preferably in early winter or early spring. For Peach Moth as the buds are expanding in the spring.

3. Distillate:

A 28° gravity oil refined for tree use.

Distillate, 12 gallons; Water, 200 gallons.

For use only with power sprayer with good agitator, which is necessary to make a mechanical mixture of the oil and water.

For the Brown Apricot, Black, and other unarmored scales, and for Woolly Aphis, to be applied during dormant season, preferably in early winter.

4. Distillate Potash:

Distillate, 10 gallons; Lye or Caustic Soda, 5 pounds; Water, 200 gallons.

Preparation and uses same as under 3. Has the advantage of freeing tree from moss.

5. Distillate Tobacco:

Distillate, 4 gallons; Black leaf tobacco extract, 3 gallons; Water, 200 gallons.

For thrips and plant lice, to be applied by power outfit only.

6. Kerosene Emulsion:

Soap, $\frac{1}{2}$ pound; Kerosene, 1 gallon; Water, 10 to 25 gallons.

Dissolve soap in 1 gallon hot water. Add 1 gallon kerosene. Mix thoroughly with spray pump by turning nozzle back into mixture.

For plant lice and other sucking insects during growing season, dilute with 20 to 25 gallons of water.

For Scale insects, Woolly Aphis and other sucking insects during dormant season, dilute with 10 gallons of water.

Kerosene emulsion can be used on small scale with hand sprayer.

[OVER]

7. **Miscible Oils:**

Commercial preparations to be used according to directions. Uses same as 3, 4, 5, and 6. Power outfit for application not necessary.

8. **Straight Kerosene:**

Kerosene or Water White Oil, 20 gallons; Water, 200 gallons.

In use for scale insects of citrus trees. Application by power outfit. Occasionally also 2% distillate used for same pests.

9. **Soap Solution:**

Soap, 1 pound; Water, 6-12 gallons.

For plant lice.

10. **Tobacco:**

Tobacco stems, 1 pound; Water, 4 gallons.

Steep tobacco in 1 gallon hot water. Dilute to 3 or 4 gallons. Or,
Black leaf extract, 1 gallon; Water, 60-70 gallons.

For plant lice, thrips, and other sucking insects during growing season.

11. **Sulphur:**

Dry.—Thoroughly dust over foliage when wet with dew. Hydrated lime sometimes used to increase adhesiveness.

Spray.—Sulphur, 30 pounds; Lime (as milk of lime), 15 pounds;
Water, 200 gallons.

For red spiders and for silver mite.

12. **Lead Arsenate:**

Lead Arsenate, 6-10 pounds; Water, 200 gallons.

First mix arsenate of lead with two or three gallons of water.

For Codling Moth, and all defoliating insects.

13. **Paris Green:**

Lime, 5 pounds; Paris Green, $1\frac{1}{4}$ pounds; Water, 200 gallons.
For Codling Moth, and all defoliating insects.

14. **Hydrocyanic Acid Gas:**

Potassium Cyanide, 1 part; Sulphuric Acid, 1 part; Water, 3 parts.

Place water and acid in earthenware vessel and add cyanide. To be used under tents or in tight rooms or boxes.

For fumigating buildings and the like, 1 ounce of cyanide to each 100 cu. ft. of space for one hour or more.

For use against scales on citrus trees. Ordinary dosage in ounces found by multiplying distance around by distance over top of tented tree and pointing off two places. Example:

Distance around bottom	Distance over top
40 ft.	\times 20 ft. = 8.0 oz. cyanide.

15. **Carbon Bisulphide:**

For the fumigation of stored products and underground insects, and for squirrels.

Usual dosage, 1 pint to 1,000 cu. ft. of space.

Place liquid in saucers or shallow vessels near top of room if convenient. Inflammable: avoid lights.

For underground insects, a tablespoonful placed in holes a few feet apart.

For squirrels, an ounce on piece of cotton, size of walnut, placed in hole and tamped in.